

WHAT IS CLAIMED IS:

1. A method of curing a thermally curable organic liquid matrix, comprising the steps of:

5 (a) providing a source of laser radiation having a wavelength between about 600 and 1000 nanometers;

(b) including in the thermally hardenable organic matrix at least one material that is light absorbing at the wavelength of the laser radiation; and

10 (c) following step (b) directing said laser radiation from said source thereof into the light absorbing material containing, thermally curable, organic liquid matrix until the thermally curable organic matrix is cured.

15 2. The method of claim 1, wherein at least about 15% of said laser radiation is absorbed in said light absorbing material containing, thermally curable, organic liquid matrix.

3. The method of claim 1, wherein at least about 70% of said laser radiation is absorbed in said light absorbing material containing, thermally curable, organic liquid matrix.

20 4. The method of claim 1, wherein said laser radiation source is a diode-laser array and said laser radiation has a wavelength of about 808 nm.

5. The method of claim 1, wherein said thermally convertible liquid matrix is an epoxide.

25 6. The method of claim 1, wherein said light absorbing material is carbon black.

7. The method of claim 1, wherein said light absorbing material is a dye.

30 8. The method of claim 1, wherein said light absorbing material is a powdered metal.

9. A method of encapsulating an electronic component supported on a substrate, comprising the steps of:

(a) providing a source of laser radiation having a wavelength between about 600 and 1000 nm;

5 (b) providing a thermally curable liquid organic matrix including at least one material that is light absorbing at the wavelength of the laser radiation;

(c) depositing on the electronic component sufficient of said liquid organic matrix to form a layer thereof covering the component; and

10 (d) directing said laser radiation onto the layer of liquid organic matrix for a time period sufficient that the liquid organic matrix is cured.

10. The method of claim 9, wherein said light absorbing material is carbon black.

11. The method of claim 9, wherein said light absorbing material is a dye.

15 12. The method of claim 9, wherein said light absorbing material is a powdered metal.

20 13. The method of claim 9, wherein said laser radiation source is a diode-laser array and said laser radiation has a wavelength of about 808 nm.

14. The method of claim 9, wherein said thermally convertible liquid matrix is an epoxide and said light absorbing material is carbon black.

25 15. A method of encapsulating an electronic component supported on a substrate, comprising the steps of:

(a) providing a diode-laser array for delivering radiation laser radiation having a wavelength between about 600 and 1000 nm;

30 (b) providing a thermally curable liquid organic matrix at least one material that is strongly absorbing for the wavelength of the laser radiation;

(c) depositing on the electronic component sufficient of said liquid organic matrix to form a layer thereof covering the component; and

(d) transporting said laser radiation from said diode-laser array, via an optical fiber bundle to an optical projector for projecting said laser radiation; and

5 (e) projecting said laser radiation onto said layer of light absorbing material containing, liquid organic matrix for a time period sufficient that the liquid organic matrix is cured.

10 16. The method of claim 15, wherein said liquid organic matrix is an epoxide.

17. The method of claim 15, wherein said at least one light absorbing material is carbon black.

15 18. The method of claim 15, wherein during step (e) said integrated circuit component is held in a fixed relationship to said optical projector and said laser radiation is projected onto said liquid organic layer in the form of a spot having a size sufficient to at least cover the electronic component.

20 19. A method of encapsulating an electronic component supported on a substrate, comprising the steps of:

(a) providing a diode-laser array for delivering radiation laser radiation having a wavelength between about 600 and 1000 nm;

(b) providing a thermally curable liquid organic matrix at least one material that light absorbing at the wavelength of the laser radiation;

25 (c) depositing on the electronic component sufficient of said light absorbing material containing liquid organic matrix to form a layer thereof covering the component;

30 (d) directing said laser radiation from said diode-laser array into an optical projector arranged to project said laser radiation in the form of a line of said laser radiation;

(e) projecting said line of laser radiation onto said layer of light absorbing material containing liquid organic matrix; and

(f) during step (e), moving the substrate and said light absorbing material containing, liquid epoxide layer covered, integrated circuit thereon with respect to said optical projector such that said light absorbing material containing, liquid epoxide layer is exposed to said radiation for a time sufficient that said light absorbing material containing, liquid epoxide layer is cured.

20. The method of claim 19, wherein said liquid organic matrix is an epoxide.

21. The method of claim 19, wherein said at least one light absorbing material is carbon black.

22. A method of encapsulating an electronic component supported on a substrate, comprising the steps of:

(a) depositing on the electronic component a thermally curable liquid organic matrix; and

(b) irradiating the matrix with laser light generated by a laser diode array and having a wavelength between 600 and 100nm the matrix being formulated so that at least 15% of the radiation striking the matrix is absorbed therein in a manner to heat and cure the matrix.